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AUTHOR Wilkinson, David
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ABSTRACT

Community colleges (CC's) are institutions using postsecondary instruction adapted in context, level, and schedule, to the needs of the community in which they are located, offering programs intended for normal completion over a two-year, full-time equivalent period, and usually offering a comprehensive curriculum with transfer, career, and compensatory elements along with general and adult education components. Two-year technical colleges (TC's), unlike vocational colleges which provide preparation for occupations, are postsecondary schools offering training in the application of technologies at a level between skilled trades and professions (e.g., data processing, and mechanical engineering). TC's fall into one of four categories: technical campuses of multi-campus CC systems; state administered two-year institutions; two-year proprietary institutions; and non-publicly funded, non-profit institutions. Drawing on these two definitions throughout, this 12-part report details the characteristics of the two types of institutions. After an introduction that includes the definitions, the following sections examine the CC's and TC's separately: (1) history; (2) institutional philosophy and related characteristics; (3) governance and administration; (4) finance; (5) student body characteristics; (6) the role of adult educators; (7) curriculum and methodology; (8) body of knowledge taught; (9) demographic trends; and (10) new issues facing the institutions. A brief conclusion underscores the importance of both types of institutions to the nation. A 64-item bibliography is included. (PAA)

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A COMPARATIVE ANALYSIS OF COMMUNITY COLLEGES AND TWO-YEAR TECHNICAL COLLEGES

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by

David Wilkinson

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SECTION 1

Introduction

The community college and two-year technical college sectors are similar yet distinct educational institutions. This paper defines both sectors in a manner that requires a separate stand-alone campus environment or, at a minimum, substantial associated owned or leased physical space for exclusive use by the institution. This definition results in the exclusion of, for example, corporate and professional organization training conducted on a corporate-owned site, unless conducted under the auspices of a community or two-year technical college that possess a true campus environment. Also excluded are certain two-year technical colleges operated by the military, such as the Armed Forces military service schools.

This paper further defines community college education and technical education in a manner consistent with definitions adopted by the Educational Resources Information Center (ERIC) (Houston, 1990). Accordingly, community colleges are defined as institutions using postsecondary instruction adapted in context, level, and schedule to the needs of the community in which they are located, offering programs intended for normal completion over a two year full-time equivalent period, and usually offering a comprehensive curriculum with transfer, career, and compensatory elements along with general education and adult education components.

This paper endeavors to separate and define two-year technical colleges as those postsecondary schools offering training in the application of technologies and at a level between the skilled trades and professions. This approach is generally consistent with ERIC's definition. Technologies are assumed to relate to the application of basic and mechanical hard sciences. A partial list of technologies includes: building construction, data processing, and electronics, as well as aeronautical, electrical, hydraulic, and mechanical engineering.

It must be emphasized that it is difficult to segment community colleges and two-year technical colleges into mutually exclusive groups. Public versus private status is certainly not a definitive criteria by itself. The division is made even more difficult by the fact that technical education is provided in a variety of venues and a great many public community college have substantial technical education components.

Interestingly, many community colleges are erroneously identified as technical colleges or solely emphasizing technical education. This is evidenced by the fact that some 13% of the two-year colleges listed in the ninth edition of American Community, Technical and Junior Colleges: A Guide have the word "technical" in their titles (Parnell and Peltason, 1984). The classification is further complicated by other factors, including the existence of a limited number of private as well as non-publicly funded non-profit community colleges.

Technical colleges as defined above are distinct from vocational colleges which offer secondary level instruction as formal professional preparation for occupations, usually of a non-technical nature, and often emphasizing a business-related curriculum (Houston, 1990). It might be noted in passing that the terminology of career education has a tendency to be inexact and "occupations" has had varied meanings over time (Cohen & Brawer, 1989). Other examples of exclusions from study are area vocational-technical schools operated as public schools to prepare youths for occupations when administered by, or operated in conjunction with, high school districts. However, even this area is not easy to segment strictly according to governance criteria (Nelson, 1984).

Two-year technical colleges of interest to this study can be divided into four principle categories when constrained to the campus environment requirement. The first group consists of technical campuses of multi-campus community college systems. The second category includes state administered two-year technical colleges, some of which are included in their state's system of higher education as branch campuses of four-year institutions, while others are administered as two-year technical college systems. A third category embodies the two-year proprietary institutes. The fourth group consists of the non-publicly funded non-profit technical colleges which are relatively rare (all Parnell & Peltason, 1984).

SECTION 2

History - An Events Chronology Approach

Community Colleges

The forerunner of today's community college is, of course, the earlier junior college. The junior college movement has been identified as having its roots as early as the 1830s (Witt, 1988). The very earliest junior colleges initiated before 1900 were unconnected to the community college movement as recognized today and were created to meet regional or religious needs. William Rainey Harper and other were major figures in the junior college movement (Witt, 1988). A. F. Lange, P. P. Claxton, and Leonard V. Koos have been acknowledged as being important in establishing the direction of the development of the early junior colleges (Diener, 1986).

Some have argued that community colleges actually have a complex dual nature philosophy engendered by a history focusing on the one hand on elitist efforts to separate the first two years of college education from the four-year institutions, and on the other on reformist efforts to democratize higher education (Witt, 1988). In any event the community college, with its more comprehensive curriculum, is felt to be a more appropriate extension of the earlier junior college movement than the two-year technical colleges (Witt, 1988).

The junior college movement itself can be more directly traced to the Morrill Act of 1862 which served as the enabling force for establishing the land grant colleges (Fields, 1962).

Legislation passed in California in the early 20th century substantially developed and funded that state's community colleges. The 1944 GI bill, in conjunction with the 1947 Truman Commission on Higher Education, shaped the mission of the community colleges during the immediate post world war II period (Vaughan, 1982; Witt, 1988). The sector experienced a substantial "first phase" growth in the 1940s (Witt, 1988).

The 1960s represented the years of highest growth for the community colleges and was an era corresponding with the initiation of state-wide governance systems and increases in financial aid. The causal factors for the dramatic growth during that era included: (1) a national shift from a manufacturing to a service industry emphasis which required a better trained workforce and an increased number of paraprofessionals; (2) the egalitarian spirit of the President Lyndon Johnson's "Great Society"; (3) shorter commuting distances that resulted from the rapid construction of new campuses; (4) increased admissions competitiveness in the four-year education sector resulting in many students selecting community colleges as alternatives modes of education; (5) and, persistent faith in the power of education by the population segment whose needs were most relevant to the community college sector. This embraced a group focused on immediate career related goals (Knowles, 1976).

Technical Colleges

The history of the two-year technical colleges is traceable to the rich history of technical education itself. Technical

education in the United States was influenced by programs in Europe and especially the Technical High Schools in Germany and similar institutions in France (Barlow, 1967). The industrial revolution in the nineteenth century was a very important factor in the promotion of technical education. The inability of the apprenticeship system to keep pace with needed training was an impetus to the growth of technical education.

The General Society of Mechanics and Tradesmen in New York city in 1820 and the Ohio Mechanics Institute founded in 1828 are often cited as offering the first formalized technical training (Stratton, 1971). The Franklin Institute founded in Philadelphia in 1824 by Benjamin Franklin was an early mechanics' institute innovator in the field (Harper, 1977).

Much of the legislation relevant to the junior college forerunners of the community colleges is also relevant to the technical colleges. This is particularly true for the publicly supported institutions. An example already noted is the Morrill Act of 1862 which enabled the establishment of the land grant colleges as a whole which is of obvious significance.

Other major legislation having differential impact on the predecessors of the two-year technical colleges includes the Smith-Hughes act of 1917. This provided for both vocational and technical programs at the secondary school level as well as for adult education specifically (Barlow, 1967). The National Defense Education Act of 1958 provided direct funding to educate technicians. This was of great importance to technical colleges

and was more significant to those community colleges that emphasized technical training than those which did not.

All four identified forms of two-year technical colleges mentioned in the introduction section of this paper are traceable to the evolution of technical education. However, the majority of the two-year institutions were developed in the 1940s, experienced significant growth in the 1960s, and thus have a more recent history.

Referring again to the grouping defined earlier, an example of the first group designated as technical campuses of multi-campus community college systems is the Los Angeles Trade-Technical College. Founded as the Frank Wiggins Trade School in 1925, it is the oldest of the nine colleges in the Los Angeles Community College district and changed to its present name in 1949 (Parnell and Peltason, 1984).

The second group consists of the several prominent state administered two-year technical colleges that were constructed in the 1940s and expanded again in the 1960s. Connecticut exemplifies the separate two-year technical college system approach having established five state-run technical colleges administered by an independent board (Blumenstyk, 1989).

The proprietary colleges have a varied history. An idealized example is the flagship ITT Technical Institute in Portland Oregon. It was started in 1971 as the United Electronics Institute and later purchased by ITT Educational Services, Inc.

The institute owns a seven acre campus environment which includes sixteen classrooms, several laboratories, and has supporting physical education facilities (Parnell and Peltason, 1984). However, most technical institutes of this type operate with considerably less generous physical accommodations. Physical space needs are usually provided by leased office building sites.

There are a relatively few non-profit two-year technical colleges that are not operated within the public sector. An example of such a two-year technical college is Oregon Polytechnic Institute. The institute was founded in 1947 in downtown Portland. Although its students are eligible for financial aid, as an institution it is not a direct recipient of ongoing public funding (Parnell and Peltason, 1984).

SECTION 3

Philosophy - Universality and Related Characteristics

Community Colleges

The community college is acknowledged to be a uniquely American institution and seven distinctive characteristics associated with its philosophy can be identified through a reading of the literature (Cohen & Brawer, 1989). Overall, the sector is dedicated to universality as represented by two critical and interrelated characteristics. These first two characteristics are low cost tuition and open admissions practices, and these have been acknowledged as being essential ingredients for universality.

A factor this writer perceives as a third distinct need-based characteristic, and related to what economists normally consider an "opportunity cost" factor, is the average student commute time represented by time in transit to an appropriate campus. This characteristic reflects the need for relatively short commute times and can be considered as the forgone benefits the participant could have gained from engaging in some other activity. This factor is felt to be more highly weighted by community college students and two-year technical college students, whether full-time or part-time, than by those typically attending four-year institutions. Incidentally, another transportation-related issue of specialized concern to rural community colleges is the need in many cases for dedicated bus service from campuses to isolated rural service locations.

A fourth characteristic is the local service region emphasis that is an integral part of the mission of the community colleges. This in-turn relates to another characteristic, namely the establishment of ties with local community organizations. Community colleges are noted for monitoring and responding to local needs through this and other mediums.

A sixth distinctive characteristic is the diversified nature of the student population served by most community colleges. They are more diverse both demographically and in terms of attendance patterns than four-year colleges. A much higher percentage of part-time students attend community colleges than four-year institutions. This in turn relates to a seventh

characteristic, namely the provision of an extremely comprehensive curriculum and educational program.

It might be noted in passing that while community colleges are desirable for society some feel they need to be even more active in interpreting their role in a competitive educational marketplace. Public relations is felt to be an important component largely overlooked by the community colleges (Harper, 1977). According to this view improvement of information dissemination efforts is crucial in order to assure continued necessary public funding.

The community college's philosophy is also reflected by its curriculum and course offerings which can be divided into four types (Cohen & Brawer, 1989). The career, transfer, compensatory, and community education categories are further described in "Body of Knowledge Taught" Section 9 below.

Technical Colleges

The two-year technical colleges place more emphasize on immediate job preparation than their community college counterparts (Godfrey & Holmstrom, 1970). This can be attributed in part to self-selection of programs by students interested in achieving career goals that will be of benefit to them sooner.

Technical campuses of multi-campus community college systems would seem to reflect the same emphasis on universality as measured by both tuition and admissions policies. It is likely that they reflect the same overall philosophical orientation as

their companion non-technical community college campuses as well. This is probably due in no small measure to a common system level administration. As might be expected, less emphasis is placed on transferring to four-year institutions by the technical campuses and concomitant higher emphasis is placed on terminal programs than their companion community college campuses (Godfrey & Holmstrom, 1970).

Proprietary technical colleges operate in the private sector by nature and are thus not as dedicated to the overall concept of universality. As measured solely by admissions policies they would seem, if anything, even more geared to universality. However, as proprietary entities their philosophical heritage does not identify low cost tuition as an intrinsic goal.

Students of proprietary technical colleges are eligible for government assistance and particularly veterans administration funding. In general, the tuition rate structures of proprietary technical colleges tend to be determined by market conditions. In an earlier era, institutes of this type often used controversial "hard sell" sales tactics. This often resulted in lack of confidence in, and diminished public respect for, the offerings of this sector.

Little research has been conducted on the very small non-profit two-year technical college sector. They would seem to lie at least at a midpoint on a philosophical continuum constructed between the public two-year colleges and the proprietary schools. In fact, one would expect their philosophy to be more oriented

toward both open admissions and low tuition than the proprietary colleges. In both regards they are probably similar in focus and orientation to the technical campuses of multi-campus districts.

SECTION 4

Governance and Administration

Governance and administrative structures are integrally related for both the community colleges and the two-year technical colleges. Governance for the field of higher education as a whole has been described as being related to institutional decision-making while administration is involved with executing the decisions made (Peterson & Mets, 1987). Form of governance of a particular community college affects the organizational structure ultimately adopted (Cohen & Brawer, 1989).

Several types of models have been advanced to describe overall higher education governance and administration that are also applicable to the community colleges and technical colleges. The bureaucratic model emphasizes organizational structure and formal authority (Richardson, 1975; Gollattscheck, 1985). The political model posits that a condition of conflict or dynamic tension exists as a normal condition between trustees, administrators, faculty, and students (Baldridge, 1971). The collegial model emphasizes shared governance among all four groups (Richardson, 1975).

Community colleges can be categorized as: local district-based having powers of taxation; state administered either by an

independent state entity or the state's four-year university system: or, as independent (all Parnell & Peltason, 1984). Within each of these three general groups, the precise nature of the resultant systems of governance and organizational structure vary widely. They have been found to be affected most by institutional size (Cohen & Brawer, 1989).

Two-year technical colleges can be categorized as technical campuses of multi-campus systems, state administered colleges, or as independent technical colleges.

Community Colleges - Local Districts

Most community colleges are organized as single districts and almost all have long ceased to be part of local public school districts. An elected or appointed board of trustees establishes institutional policy and selects a community college president or superintendent as the college's chief executive officer.

A simplified traditional organizational structure might include individual dean's positions that oversee: academic affairs-related areas including curriculum and instruction; student affairs and student personnel; and, business affairs. At the lower end of the organizational hierarchy are department chairs typically reporting to a dean of academic affairs or instruction who normally hold faculty appointments (Cohen & Brawer, 1989).

As noted, institutional size is the principle factor in determining organizational structure complexity. A large

community college may, for example, have additional deans responsible for: institutional research; special services including physical plant and campus police; college enterprises such as the bookstore; information services including management information systems; a cluster consisting of, for example, the learning resource center, the library, and the campus closed circuit television (CCTV) system.

A large multi-campus district will usually have a chancellor or equivalent position that oversees system-wide administrative functions. Reporting to this position will be individual college presidents. Very large multi-campus districts may have in-house general counsel and similar high-level positions. There is more centralization of authority at the chancellors office level in multi-campus districts. However, the precise extent of this as well as the functional areas actually administered at the higher level versus those administered at the individual campus levels varies significantly (Cohen & Brawer, 1989).

Community Colleges - State Administered

Public community colleges under state control operate under some form of centralized authority. Thus, they may be administered by a state board of education, a state community college commission, or the state's four-year higher education system. There are significant differences in educational philosophy associated with the various forms of state control. For example, when included under the state's higher education system, the community colleges will often be treated as branches

of the four-year universities. Furthermore, a distinctive feature of the branch campus approach is that it is more likely to prepare students for transfer to four-year colleges due to strengthened articulation (Godfrey & Holmstrom, 1970).

An advantage of this, namely state control of community colleges, is said to be an enhanced ability to exert influence on respective state legislatures. A disadvantage of state control noted by some is that state level coordination results in reduced sensitivity to local needs (Tillery & Wattenbarger, 1985). In general, state control results in more functions administered centrally with resultant diminishment of campus autonomy (Kintzer, 1980).

Community Colleges - Independent

Independent community colleges include private non-profit, proprietary, and church-related institutions. These have a wide range of governance and administrative structures. Private non-profit community colleges usually have a board with the usual policy making responsibilities associated with a board of directors. The proprietary institutions tend to be more like business enterprises and are more likely to reflect corporate reporting structures than the other sectors. Governance for church operated community college is ultimately vested in the church itself.

Two-Year Technical Colleges - Technical Campuses of Multi-Campus Community College Systems

The technical college campus of a multi-campus community college system is overseen by a local college president. This position reports to a system chancellor level position who in-turn reports to a board of trustees or equivalent body. And, in some cases there may be a separate dean of technical or occupational education at the chancellor's office level. A distinct feature of the multi-college technical campus approach is resultant standardization and similarities between constituent technical college and community college campuses. This can be attributed in no small measure to a common chancellor's office level administration. An example of a technical college campus within a multi-campus system already noted is the Los Angeles Trade-Technical College. It is one of nine colleges in the Los Angeles Community College district (Parnell & Peltason, 1984).

State Administered Two-Year Technical Colleges

This form of state technical college operation is identified by direct state administration. Under such an arrangement a state's technical colleges may have reporting relationships and operational structures that are similar to the way a state might oversee its state administered community college system.

State control of two-year technical colleges has been noted as having the potential to create role conflict for members of a technical college's administration. This can be the result of a potential administrative reporting duality. This is traceable to the fact that in some cases there is reporting responsibility to

both the director of the state's two-year system as well as to the state's director of vocational education (Harris, 1974).

This sector is not without its challenges. As noted, Connecticut has been a leader in the field with its establishment of five state-run technical colleges administered by a separate board comprised of thirteen members (Blumenstyk, 1989). However, more recently the Connecticut Board of Governors for Higher Education has recommended that its five technical colleges be merged with the state's twelve community colleges. The stated reasons were that the two-year technical colleges had been operated in an inefficient manner and were too expensive to operate on a separately administered basis (Blumenstyk, 1989).

Independent Two-Year Technical Colleges

Independent two-year technical colleges consist of proprietary and non-profit technical colleges. There are no church operated two-year technical colleges. The proprietary colleges are administered more like business entities and exhibit a strong emphasis on the marketing function. In the case of the ITT Technical Institutes, for example, administration is centralized at the "home office" located in Indianapolis, Indiana. Substantial centralized marketing functions are carried out from this location. Individual "campuses" are administered by local managers.

There are relatively few non-profit two-year technical colleges not operated within the public sector. As noted, the

non-profit technical colleges usually have a traditional president and board of trustees structure.

SECTION 5

Finances

Community Colleges

The vast majority of community colleges are publicly supported. The single most important financial trend concerning publicly supported community colleges has been that the climate of expansive funding associated with the period of the 1960s has ceased. This has given way in recent years to a much more conservative funding environment (Wattenbarger & Vader, 1986).

The other major trend has been for state funding to take on an increased proportion of total institutional funding over time (Richardson & Leslie, 1980). Voter approval of local initiative measures as exemplified by California's Proposition 13 have limited local property tax income and resultant local funding for community colleges as a whole. This has been a major factor in both resultant higher proportionate state funding and diminished overall funding levels over time (Honeyman; Williamson; & Wattenbarger, 1990).

There are a wide range of funding patterns among the various states. This factor makes precise inter-state comparisons of funding mechanisms difficult (Honeyman; Williamson; & Wattenbarger, 1990). However, four major categories of funding patterns have been identified (Wattenbarger & Vader, 1986).

Negotiated budget funding is where the state legislature responds to input from the state's community college sector and determines funding on an annual basis. The unit-rate formula approach uses a specific formula as a basis for level of support. Formulae used are usually traceable to full-time student equivalent (FTES) measures. The minimum formula plan modifies the FTES formula to compensate for differential levels of local funding support. Cost-based funding endeavors to match costs of (usually mandated) program functions to actual expenditures.

The Higher Education Acts of 1963 and 1965 and their antecedents have been of major importance in funding the community colleges. And, the later Title IV Amendments to the Higher Education Act of 1972 have also been particularly significant. This legislation enabled for the very first time the provision for basic opportunity education grants for part-time students. Part-time students are, of course, the major client base of the community colleges (Knowles, 1976).

Current financial challenges for the community colleges include underfunding of ongoing programs and staff salaries, the need for additional capital expenditures to upgrade and replace aging and inadequately sized buildings, and funding for support services, including "at risk" student support needs (Honeyman; Williamson; & Wattenbarger, 1990). The future financial outlook for the community colleges is said to be less than optimistic.

Two-Year Technical Colleges

Public two-year technical colleges have been substantially affected by funding enabled by the Vocational Education Act of 1963 and its antecedents. These have provided funding for both technical college facilities construction and instructors (Witt, 1988). More recent developments have included the very significant Carl D. Perkins Act of 1984. This legislation served as precursor to the Vocational Education Opportunities Program which has provided significant funding for two-year technical education (McKinney & Davis, 1988).

The proprietary sector has been shaped by two important external events. First, an important trend in the continuing success of the proprietary sector applies to both the two-year and four-year private institutions. This factor has been the continuing availability of significant levels of financial aid. It is very significant that students of proprietary technical colleges are eligible for government assistance. As noted, the type of education supported by Veterans Administration funding is particularly relevant to this sector. Share of Pell grants to the proprietary sector has increased dramatically over the last few years (Lewis & Merisotis, 1987). In fact, some have observed that without the availability of financial aid (primarily Pell grant funding) this fastest growing sector would almost cease functioning as a viable industry (Cohen & Brawer, 1989).

A second external force affecting the proprietary sector is that tuition costs are affected by market forces. Competition

exists both among individual institutions within the proprietary sector as well as between the proprietary institutions and the public community colleges. To a certain extent, competition with the community college sector has served as a constraint on tuition increases. Significantly, tuition level has been found to an important determinant in student selection of proprietary schools (ITT Educational Services, Inc., 1982).

SECTION 6

Student Body

Community Colleges

A distinctive characteristic of the community colleges relative to the four-year sector is the diversified nature of its student population. Community college students tend to be more diverse, both demographically as well as in terms of learning abilities, than the four-year colleges. There is also a wider age range exhibited by students attending the community colleges than the four-year institutions. Significant also is the fact that community college students have a much stronger practical orientation. This results in a stronger concern for immediate goal achievement than their four-year college student counterparts (Monroe, 1972).

The community colleges enroll a higher percentage of minority students than the four-year institutions. Over one-fourth of all community college students nationally are members of ethnic minority groups (National Center for Educational Statistics, 1990). In certain key states, such as California, some one third

of enrolled community college students are ethnic minorities. There is a very high correlation within states between the percentage of minority representation with respect to high school enrollments and community college enrollments (National Center for Eduction Statistics, 1986).

Numerous studies have noted differences in learning aptitudes between students attending community colleges and four-year institutions. In general, learning aptitude of community college students tend to be lower with resultant associated difficulties on the part of many students in performing activities that require reading, writing, and problem solving skills (Friedlander, 1981). As might be expected this places high demands on the compensatory or remedial education function.

A higher proportion of part-time students attend community colleges than four-year institutions. In fact, the differences in attendance patterns are significant. About two-thirds of all community college students attend part-time (American Association of Community and Junior Colleges, 1989).

Two-Year Technical Colleges

It has long been noted there are significant differences associated with students attending two-year technical colleges, institutions that have come to be known as community colleges, and two-year branch campuses of universities. Students attending the three types of institutions vary significantly according to demographic composition, educational experiences, and career goals (Godfrey & Holmstrom, 1970).

Enrollment in two-year technical colleges has increased over the years. However, the rate of growth has been particularly significant in the two-year proprietary segment. Surprisingly, in recent years enrollment in proprietary schools has increased as much as twenty percent between certain years (ITT Educational Services Inc., 1982).

Perceptions of students, prospective student enrollees, and the general population shed light on the growing importance of the proprietary sector. A representative survey of some one-thousand adults was conducted several years ago by a major operator of two-year proprietary institutes (ITT Educational Services, Inc., 1982). The purpose was to determine perceived value of specialized training by adults. Eighty-one percent of those queried responded favorably. Essentially, respondents indicated that forecasted changes in the workplace in the next few years would necessitate additional specialized training of the sort provided by the proprietary schools.

SECTION 7

Role of Adult Educators

Community Colleges

The community college is primarily a teaching institution. This constitutes a fundamental difference between the community colleges and the four-year institutions. In this regard, community college faculty have historically seen their role primarily as teachers with minimal concurrent responsibility for

conducting research (Eells, 1931). This emphasizes a fundamental difference as research and publishing are normally considered integral to the responsibilities for faculty associated with the four-year institutions.

Outcomes assessment has added an additional dimension to the role of community college educators in recent years. This has been in large part due to concerns about increasing costs associated with education in general as well as the challenges related to entry of large numbers of underprepared students. The measurement of student learning thorough institutional studies has become quite expansive. Much of this activity is conducted in order to determine appropriate placement in remedial and other programs that fall within the province of the compensatory education function (Roueche & Snow, 1977).

Two-Year Technical Colleges

The two-year technical colleges are also primarily teaching institutions. Higher emphasis on career education than even the community colleges is reflected in a focus on teaching per se. Two-year technical college faculty have an added dimension to their role of educators. This is the practical necessity for them to maintain a high degree of involvement with local professional and trade groups, particularly organized labor and industry organizations. However, some have noted the need for two-year college educators to take an expanded role in evaluating and studying industry conditions and defining resultant needs (Kuhns & Mastorana, 1977).

Adult educators have additional tangential roles in the two-year technical college sector. Some of these include involvement with licensing and certification. This is particularly the case for the proprietary sector. Also, the involvement of marketing researcher has taken on crucial importance for proprietary institutions. Additional evidence of the importance of more encompassing roles is that availability of certain services are crucial to proprietary institution success in a competitive marketplace. It has been found in this regard that employment advising and employment assistance services are very decisive factors in student selection of two-year proprietary technical colleges (ITT Educational Institute, Inc., 1982).

SECTION 8

Curriculum and Methodology

Community Colleges

The community college's curriculum consists of the set of courses it offers. An important issue for a community college is the extent to which its curriculum is lateral, linear, or sequential in form. A lateral curriculum is made up of divergent classes with, for example, a large number of students each taking one class. A linear form is structured to facilitate progress of a moderate number of students toward completion of degrees or certificates. A sequential curriculum consists of a limited number of students each taking several courses and is often associated with extensive prerequisite requirements.

Community colleges are often noted for delivering their curriculum thorough a broad range of mediums in addition to reliance on the traditional classroom techniques. These include increased use of instructional television program delivery, learning resource centers, computer-based education, and mastery learning techniques. These are just a few examples of the manner in which community colleges differ from four-year institutions.

Two-Year Technical Colleges

A distinctive characteristic of the philosophy of two-year technical colleges is shared by the entire field of technical education. This consists of the existence of wide variations among prerequisite education, admission requirements, and the actual nature of the training programs themselves (Ferrin & Arbeiter, 1975). Differing job requirements across different fields account for much of the heterogeneous nature of this sector. This is further complicated by the fact that technical certification in some fields requires more time to completion than the normal two year time horizon associated with the two-year technical colleges (Ferrin & Arbeiter, 1975).

The two-year technical colleges normally place less emphasis on the transfer function than the four-year institutions as might be expected. A concomitant higher emphasis is placed on career or terminal programs than on their companion community college campuses. With the exception of courses directed toward the upgrading of existing skills which are sometimes included in the group, there is less emphasis on community education (Godfrey &

Holmstrom, 1970). Thus, technical colleges exhibit a less comprehensive curriculum than the community colleges.

As might be expected, the two-year technical colleges as a group place more emphasize on immediate job preparation than their community college counterparts (Godfrey & Holmstrom, 1970). As for the proprietary colleges, an important consideration in student selection of these schools has been found to be the range of curriculum offered (ITT educational Services, Inc., 1982).

An indication of the manner in which curriculum design and delivery differs between the two-year technical colleges and the community colleges is evidenced in program and course design and experimentation. An extremely wide range of approaches have been tried in the area of technical curriculum development. One such example is a proposed "product development cycle" approach that identifies the task that potential technicians will actually do and their role within each process (Gonzalez & Weintraub, 1985).

SECTION 9

Body of Knowledge Taught

Community Colleges

Community college course offerings are comprehensive in nature and can be divided into four types (Cohen & Brawer, 1989). Career or terminal education consists of programs of study resulting in the award of the Associate degree. The transfer or collegiate function is represented by course offerings which parallel the first two years or lower division level coursework

of the four-year colleges. Compensatory or remedial education fulfills the needs of underprepared students not yet ready to fully function at the post-secondary level. The fourth identified type of offering consists of community education and includes the adult education and continuing education functions.

The primary professional organization serving the community college sector is the American Association of Community and Junior Colleges (AACJC). Some church operated independent community colleges are affiliated with the American Association of Bible Colleges (Parnell & Peltason, 1984).

Two-Year Technical Colleges

The two-year technical colleges are particularly sensitive to changes in the nature of the body of knowledge taught under their purview. Education relating to the trades and industry and the application of the sciences is their "raison de'etre." As noted, primary emphasis is placed on the career education function, with minimal emphasis on community education when defined so as to exclude education intended to upgrade existing technical skills.

The two-year technical colleges monitor and respond to issues concerning technological innovation, trends, and fundamental changes in technology itself. They are recognized as being innovative in the development of new curriculums. For example, a boom in industrial robotics led several institutions to offer courses in this specialty. This was followed by even more specialized programs developed to introduce and train manufacturing engineers in the field of robotics (Bainter, 1986).

The proprietary schools are especially sensitive to trends in labor market demand as a result of their own research. They have been recognized as being able to quickly respond with new technical programs. The proprietary technical colleges operated by ITT Educational Services have developed new courses on very short notice as well as specialized program offerings on a range of subjects (ITT Educational Services Inc., 1982).

The primary professional organization serving the two-year technical colleges, separate from the AACJC, is the National Association of Trade and Technical Schools. It includes membership by both public and private institutions. Some two-year technical colleges are affiliated with the Association of Independent Colleges and Schools (Parnell & Peltason, 1984).

SECTION 10

Demographic Trends

The most important challenges and opportunities facing both the community colleges and the two-year technical colleges relate to the need to focus on preparing for existing and predicted demographic transition. There is no question that both sectors will need to enhance development of programs in order to respond to resultant changes in educational needs (Hankin, 1991).

Community Colleges

By way of introduction, it should be noted that community colleges currently enroll some 5 million students annually. Enrollment has increased by as much as 15% between certain years

over the 1950-1991 period, including the high growth years of the 1960s. Some 450,000 associate degrees are currently awarded each year, and an assumption is made that this number will increase in proportion to total enrollment growth (National Center for Education Statistics, 1990; Cohen & Brawer, 1989).

Part-time enrollment constitutes about two-thirds of total community college enrollment. This is considerably higher than that of the four-year institutions as previously noted. The average age of community college students is higher at approximately 29 years of age. Women account for about 53 percent of all community college students (National Center for Educational Statistics, 1990).

There are various treatments dealing with general predictions for the community college of the near future, and most have certain elements in common. In general terms it is predicted that it will have a student body with more minorities and persons over the age of 55 (Gilbert, 1991). To this can be added a forecast that the majority of new faculty will have been hired subsequent to substantial retirements occurring in the 1990s.

Principle identifiable factors in determining community college enrollments are the proportion of the population contained in the age 18 population segment and high school graduation rates. The age 18 segment peaked in 1979 at 4.5 million, and then declined considerably during the 1980s. However, from an estimated local minima in 1992 of around 3.5 million it will continue at about this same level until 1997.

Then, from a predicted level of 3.6 million in 1998 it will begin to trend substantially upward (Bureau of the Census, 1990). To this total will be added the effects of immigration. The high school graduation rate has held very close to 73% for some ten years (National Center for Educational Statistics, 1990). This would seem to portend that graduation rates will continue near this same level for the foreseeable future.

Other factors driving enrollment are less predictable. These less quantifiable variables include assumptions regarding: continued financial aid assistance, tuition rates in absolute terms and resultant tuition differentials, alternative employment opportunities, and the demands of the military (Cohen & Brawer, 1989). Overall, predictions are that community college enrollments will increase by some 20% from current levels to about 6 million students by the year 2000 (Cohen & Brawer, 1989).

The community colleges are major beneficiaries of growths in minority populations. As has been noted, approximately one-quarter of all community college students are ethnic minorities. Significantly, minority enrollment is overrepresented in the community college sector. Although they enroll about 37 percent of all college students in the Nation, community colleges actually enroll a full 47 percent of total minority students (National Center for Educational Statistics, 1990). In conjunction with assumptions there will be no further limitations on immigration, these trends portend that community colleges will experience continued future increases in minority enrollments.

Community college enrollments will have differing patterns among the various states. For example, in California it is predicted that enrollments in its community college system will increase by approximately 40% by the year 2005 (California State Postsecondary Education Commission, 1990). (However, very recent budgetary realities may not be reflected in this assessment. The same study predicts California State University enrollment will increase between 31% and 41% during the same period.)

Some interesting statistics have been reported at the system level in California by what is actually one of the Nation's largest community college districts. During the Spring 1990 to Fall 1990 period enrollment of the Los Angeles Community College District increased from about 105,000 to 111,500 students for an increase of about 4%. During this period, some 37% of students were white, 27% Hispanic, 15% Asian, and 17% Black. About 56% were female, 34% were full-time, 43% attended during the day, and 55% were transfer oriented (Los Angeles Community College District, 1991). Overall, this would seem to reveal the direction of future trends in terms of both quantity and diversity at least for large urban area multi-campus systems.

Two-Year Technical Colleges

The same factors impacting community college enrollments will also affect the two-year technical colleges. As noted, these quantifiable factors include the size of the age 18 population base and high school graduation rate projections. Yet, as with the community colleges the effect of a group of other variables

on overall technical college enrollments are difficult to predict. These include financial aid availability, tuition level, and alternate employment opportunities factors.

It might be postulated that the two-year technical college segment will be even more sensitive to the later types of variables than the community colleges. Students who enroll in the totality of two-year technical colleges, which includes the proprietary schools, tend to come from lower socioeconomic backgrounds. As a consequence, two-year technical college participation may be even more subject to economic variables.

As a result of these factors, it is even more difficult to make predictions for the two-year technical colleges. Nevertheless, it is of value to focus on recent experience at the state level as a way of gaining insight regarding the national picture. The Milwaukee Area Technical College (MATC) example is of interest. The multi-campus MATC district has seen substantial changes in recent years and has a student headcount in excess of 20,000 students. Although enrollment increased less than 10% from academic year 1980-81 to 1990-91, total minority enrollment increased by 45.8%. Specifically, Hispanics more than doubled their enrollment, Asians increased by 96%, and Blacks increased by 30.4% during the same period. And, as might be expected there has been a gradual increase in student average age over the same period (Milwaukee Area Technical College, 1991).

Overall, the same factors underlying generally favorable enrollment predictions for the public community colleges are

applicable to the public two-year technical colleges. In conjunction with continued projected strength for the proprietary sector, the two-year technical college sector as a whole should experience healthy increases in enrollments in terms of both quantity and diversity.

SECTION 11

New Issues

A variety of new issues face the community colleges and the two-year technical colleges. These issues are noted for their incredibly wide range and breadth of scope. And, a great many are at least tangentially related to macro-level societal trends. These issues are treated as a group in this discussion not as problems, but are interpreted to represent multi-dimensional challenges and opportunities for the community colleges and the two-year technical colleges.

Community Colleges

At the national level, a common core of general issues has long been identified. This includes: increasingly diverse student bodies; reductions in financial resources; increased accountability mandates; and, impending faculty shortages (Angel & DeVault, 1991). To this can be added a growing number of academically underprepared students, demands to improve college governance and campus collegiality, and the need to ensure evidence of institutional effectiveness (Macomb Community College, 1991).

Beyond this can also be added examples of the effects of predicted world-wide trends. A few of these include the impact of: an emerging global economy; a predicted renaissance of the arts (that may result in an even larger client base for community education); and, an indicated need to train more women for leadership positions (Naisbitt & Aburdene, 1990). Other issues more directly related to the community college environment include the need to build a sense of campus community and the probability that community colleges may be called upon to help solve local and national economic problems (Parnell, 1990).

Some have predicted other additional challenges traceable to societal concerns facing the Nation that will be felt by the community colleges. These include forecasts of increasing social and economic stratification in conjunction with growing dissatisfaction among at-risk populations (Raisman, 1990; Parnell, 1990). This directly relates to the pressing need for increasing minority student participation levels particularly among Blacks (Gilley, 1991). And, remaining to be addressed is a unified and comprehensive definition of the institutional mission of the community colleges. This includes dealing with a great many issues. Not the least of these is the long-standing "Access to what?" question implicit in the community colleges emphasis on the open door concept and which has resulted in continued tension between questions of access and quality (Cohen & Brawer, 1989).

Still other and even more specific issues involve an indicated need to strengthen articulation between community

colleges and both high schools and other higher education institutions. Also evident is a revealed need for community colleges to provide increased campus child care services as an integral part of their mission that comes at a time of sharply increased operational costs (Parnell, 1990).

Community college trustees perceive their world from a similar viewpoint. Additional issues perceived of importance by trustees are exemplified by concerns relating to the pressing need for community college fund raising efforts and ethics policy formulation (Association of Community College Trustees, 1991a). It might be noted that expectations concerning the former, namely fund raising, are not unrealistic. It has been found that corporate foundations are quite receptive to requests from two-year colleges (Fuchsberg, 1988).

And, an example of a more specialized vision from this same group includes a perceived need for a national strategy for human resource development. In this view, such a strategy is needed at the national level in order to deal with the challenges posed by: demographic changes; global competition; technological change; low levels of literacy; and, outmoded educational practices and standards (Association of Community College Trustees, 1991b).

Issues at the state level reflect macro-level national concerns and more. For example, the California Community Colleges have identified a wide range of more specialized topical issues. A few of these include: accommodating enrollment demands in the system; fostering diversity; improving overall

system image; and, strengthening California's economic development efforts (Sheehan, 1991).

Another issue for California consists of the challenges inherent in the implementation of the educational mandates contained in California's Assembly Bill 1725. This recently enacted legislation establishes two sets of goals for staff diversity for the California community colleges. First, a near-term goal of a 30% system-wide hiring rate of ethnic minorities has been fixed. A second and longer-term goal is oriented toward having a workforce ultimately in place that will mirror the demographic characteristics of the state's population in the year 2005. The California community colleges have generally begun to approach these goals during the 1989-90 period (California Community Colleges Board of Governors, 1991).

Finally, still another new issue that has been identified is an overall need for community colleges to enter into new educational alignments with other educational, governmental, and public and private entities. One approach to this notion has been labeled as the "communiversity" concept (Eaton, 1988). This construct is envisioned to include a range of cooperative efforts and loosely structured partnerships. These grouping are intended to provide reciprocal benefit to the community colleges at all levels. As can be seen overall, existing and newly identified issues facing the community colleges are noted for their breadth as well as the range of the opportunities they represent.

Two-Year Technical Colleges

New issues relevant to the two-year technical colleges include essentially all of the issues facing the community colleges and more. A matter of shared concern to both sectors is the long perceived need and practical necessity to more fully integrate liberal and technical learning (Parnell, 1990).

Issues facing the technical colleges differentially include challenges associated with high technology and the rapid change of technology itself. Of particular relevance is the need to maintain highly expensive laboratories and other replicated work environments normally associated with technical education. In addition to inherent financial burdens, these considerations also place exceptional demands on technical curriculum and course development (Brooking, 1984). A related area of concern is a need for continuing and expanded industry and technical education cooperative efforts (Warmrod, 1984).

There are certain issues, although specialized, that the technical colleges have more in common with the community colleges. One such area of concern is increased professional development and in this case focusing on the role of technical educators (Hoerner & Suydam, 1984). Still another common issue is an indicated need to engage in outcomes assessment, specifically in terms of focusing on technical education assessment (McMahon, 1984). It might be noted that continuation of program quality is perceived to be a significant challenge to the two-year technical colleges as a whole (Doty, 1984).

An indicated need for technical colleges to engage in contract education with business and industry is an area of tremendous challenge and opportunity (Gold, 1984). And, some propose an integral economic development role for community and technical colleges in this manner thorough large-scale customized contract training programs (Kent, 1991).

Finally, no discussion would be complete without noting the controversy inherent in the "cooling-out" function of the two-year institutions presumed by Clark over thirty years ago (Clark, 1960). There has been considerable unresolved debate on whether the two-year sector enhances minority access to higher education or retards it. This viewpoint posits that the sector "siphons off" minority students who would have otherwise attended four-year institutions (Astin, 1982). This issue is of particular relevance to the two-year technical colleges as students are often directed to technical and occupational programs (Cohen & Brawer, 1989). This writer considers this analogous to a form of "educational triage" warranting further in-depth study.

SECTION 12

Conclusion

This paper began by noting that community colleges and two-year technical colleges are similar yet distinctly different institutions. The community colleges are noted for their more comprehensive curriculums and the technical colleges for their emphasis on programs which lead in many cases to more rapid job placement. To a certain extent there is competition both between

the two sectors and among member institutions with each sector. A great many factors, not the least of which has been this competitive influence, have determined the character of the community colleges and the two-year technical colleges of today.

Although beyond the scope of this paper to review world-wide events, it is worth noting that the distinctive American community college as an institution must be doing something right. An example relates to Japan's two-year education sector consisting of "Junior Colleges" and "Special Training Colleges." The junior colleges, most similar to our community colleges, have been traditionally associated with academic non-technical and non-vocational education. Recently however they have begun to substantially diversify into providing technical course offerings (Kambavashi, 1981). Thus, it would seem that the community college versus technical college comparison and evolution continues to propel itself even at the world-wide level.

In closing, the wide range and breath of challenges facing the community and technical colleges seem almost overwhelming. Nevertheless, it seems self-evident that American society as a whole is dependent on the community colleges and the two-year technical colleges being able to successfully transform these challenges into a vision of opportunities during the coming era.

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